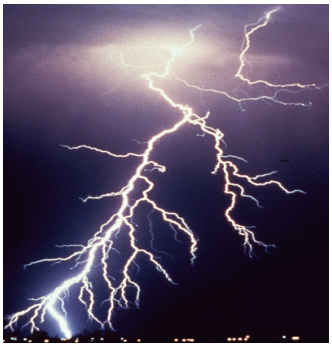
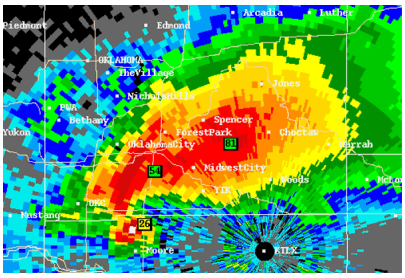
The National Severe Storms Laboratory

Studying devastating storms in the heart of tornado alley

Experimental weather balloons are used to study the electrical structure of thunderstorms.



NSSL is dedicated to the study of all types of severe weather, including lightning



NWS forecasters track storms using NSSL technology

The first of many strong tornadoes strikes central Oklahoma on May 3, 1999.

1315 East West Hwy
Silver Spring, MD 20910
301-713-1671
www.oar.noaa.gov

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TheThe National Severe Storms LThe National Severe Storms LaboThe National Sev ofof all aspects of severe and hazof all aspects of severe and hazardous wof all a Oklahoma,Oklahoma, with staff in Colorado,Oklahoma, with staff in Colorado, Nevada, W peoplepeople of people of NSpeople of NSSL, in close partnership with the Nationa dedicateddedicated to improving the lead time and accuracy of severe weather warnde and forecasts in order to save lives and reduce property damage.

SevereSevere weather research conducted at NSevere weather research conducted at NS ininin both severe and hazardous weather forecasting resultingin both severe and hazardo leadlead times to the public.lead times to the public. NSSL scientists are exploring new understandingunderstanding of the causes of severe weather and understanding informationinformation to assist National Weather Service (NWS) finformation to ass Federal, university and private sector partners.

Recent Accomplishments:

- ScientistsScientists from NSSL recently completed two field eScientists from N severesevere and hazardous weather. IPEX, the Intermountsevere and haza Experiment,Experiment, was designed to improve forecasts of winter wea especiallyespecially in the high population growth areas of the western Unit States.States. STEPS, the Severe ThunderstormStates. STEPS, the Severe Thu Study,Study, focused a number of data gathering tools on thunderstorms in the highhigh plains to better understand how rain anhigh plains to better unde ***Payoffs:Payoffs: The knowledge gained through these field program conductedconducted by NSSL scientistsconducted by NSSL scientists wi weatherweather phenomenon including tornaweather phenomenon inc floods, snowstorms and freezing rain.***

- NSSLNSSL continues to be a pioneer in the development of NSSL continues NSSLNSSL is presently researching the use of dual polarization radar to improveimprove precipitation meimprove precipitation measuremimprove improvementimprovement to theimprovement to the current NEXRADimprovem moremore informore informatmore information about precipitation in cloud betweenbetween rain, ice, habetween rain, ice, hail anbetween rain, ice, hail ***helphelp forecasters provide better warnings for flash floods, thelp forecast one severe weather threat to human life.***

- NSSLNSSL is committedNSSL is committed to incorporating cuttingNSSL is con ofof severe weather signatures in radar of severe weather signatures in rada NationalNational Weather Service forecasters make better anNational Weath decisions.decisions. The latest tool, NSSL s Warning Decision Supportdecision includesincludes automated algorithm detection tools for the NEXRAD Doinclu radarradar toradar to identifyradar to identify rotation in storms preceding tornadoe ofof hail, asof hail, as well as simply identifying and trackingof hail, as well as sim isis presented in an easy to use displis presented in an easy to use display iis

interrogationinterrogation tools. ***Payoffs: Several of these tools haPayoffs: Several of these tools h NationalNational Weather Service'sNational Weather Service's systems and have contributed to impr with fewer false alarms.***

" NSSLNSSL is workingNSSL is working directlyNSSL is working directly with the National Weather Service to NEXRADNEXRAD Doppler radar from a proprietary computer platform to a UNIX bNEXRAD Doppler ra platform. platform. ***Payoffs: This increasesPayoffs: This increases the radar s flexibility, extending it lowering maintenance and upgrade costs.***

What's next for NSSL?

NSSLNSSL researchers will soon begin adapting state-of-the-art radar technology currently deployed onNSSL rese shipsships forships for use in spotting severe weather. Phased-array radar reduces the scan or data collection timesh sixsix minutes to only one minute, potentially increasing the averagesix minutes to only one minute, potentially increa minutesminutes to 17 minutes. When combined with other technminutes to 17 minutes. When combined with oth times may be extended to an unprecedented 22 minutes.

NSSLNSSL has a unique opportunity to combine facilitiNSSL has a unique opportunity to combine facilitiesNSSL universityuniversity weather organizations also focused on severe weather research. Planning is underway for the proposedproposed National Weather Center, a new $60 millionproposed National Weather Center, a new $60 million researchresearch and foreresearch and forecasting research and forecasting complex in the world. The n communcommunicationcommunication for the weather researchers and forecasters engaged in complimentary e better forecasts and warnings of severe and hazardous weather.

NSSL hasNSSL has also begun working on ways to improve short-termNSSL has also begun working on ways to thethe National Weather Service, basic tornado research to understand how tornadoes form, and realtime deliverydelivery of radar data to thedelivery of radar data to the public via the Internet. In addition,delivery of radar da improvedimproved understanding of tornadoes and other sevimproved understanding of tornadoes and other se DopplerDoppler radarsDoppler radars employing the latest technology and byDoppler radars employing the latest tech instruments into and around storms.

Research Partnerships:

NSSLNSSL has a research NSSL has a research partnNSSL has a research partnership with the Cooperative I (CIMMS),(CIMMS), a cooperative(CIMMS), a cooperative institute between NOAA and the University of Oklahoma. A researchresearch partnerships with the U.Sresearch partnerships with the U.S. research partnerships with the Administration, and several large and small corporations.

Budget and Staff:

NSSLNSSL is a $15 million laboratory NSSL is a $15 million laboratory ($5.5 NSSL is a $15 million laboratory ($5 employees and 92 university employees.

For more information contact:

Dr. James Kimpel, Director
National Severe Storms Laboratory
1313 Halley Circle
Norman, OK 73069
Phone: (405) 360-3620
http://www.nssl.noaa.gov